

Abstract

The present invention relates to nitride semiconductor, and more particularly, to GaN-based nitride semiconductor and fabrication method thereof. The nitride semiconductor according to the present invention comprises a substrate; a GaN-based buffer layer formed in any one of a group of three-layered structure $\text{Al}_y\text{In}_x\text{Ga}_{1-x-y}\text{N}/\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ where $0 \leq x \leq 1$ and $0 \leq y \leq 1$, two-layered structure $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ where $0 \leq x \leq 1$, and superlattice structure of $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ where $0 \leq x \leq 1$; and a GaN-based single crystalline layer.